

Research paper on
the energy source is
cheap as it is readily
available with init...

[Environment](#), [Electricity](#)



Outline

Wind energy can be used as an alternative energy source but the question is whether it is really cheap, effective, and practical.

Science is of wind energy is by convention where cold air moves down and hot air up causing a cyclic motion that can drive turbines.

It is also very effective as remote and rural areas can be supplied with energy due to their vast land spaces.

Furthermore, it has no emissions hence does not lead to global warming and environmental pollution.

Major shortfall is that it is hard to be predicted by meteorologists making it highly unreliable especially for commercial purposes.

However, modern technologies can be used to combat unreliability of wind energy.

Wind Energy Assessment

Wind has been used as a source of energy since ancient ages. Chinese and Babylonians were using this form of energy in early days to irrigate their crops and for boat sailing. Europeans were also using wind power in middle ages to grind their corn. In the recent past, different countries have continued to generate wind power as a substitute to other sources of energy.

According to Walter, wind energy is one the best alternative source of energy especially in this period of global warming consequences (9).

However, the question that many people ask themselves when they hear

about wind energy is whether this source of energy is really cheap, effective, and practical to be relied upon. This paper attempts to answer these questions in order to understand whether wind energy is a reliable source of energy.

The science of wind energy occurs by convection where the sun rays heats the atmosphere differently resulting in air zones having different temperatures (Walter 10). The heated air rise and the cool air in the surrounding moves to replace the rising air as it become denser. This movement causes a cycle called conventional cycle that is capable of moving a turbine or large propeller if put in its path. A large propeller that may be placed on a higher ground is then made to rotate by this moving air (wind). The revolving propeller is then connected a generator that produces electricity. Many towers are built together in order to generate more power since the amount of electricity produced will depend with the numbers of towers and propellers. Places that have strong, steady, and reliable wind such as coastal areas, mountain tops, rounded hills, and open plains are mostly preferred when building towers (İlkilic & Nursoy 450). A wind travelling with a speed of at least 25km/h is required to rotate the propellers (İlkilic, & Nursoy 453).

Compared with other sources of energy such as water and nuclear, wind energy is relative cheap since its main raw material (wind) is obtained free of charge. A propeller does not require fuel since it is rotated by the moving wind. Schroeder claims that offshore wind offers a lot of potential for power generation in the U. S coastal areas since it does not require much capital to

generate (1631). The capital required to build a power plant for generating electricity from wind is less compared with capital that may be required to produce energy from fossils or nuclear sources.

The energy source is very effective as it can be used to supply rural areas with energy due to costs that are incurred to transmit energy in far areas. Again in remote areas, there are many open plains that can be used to erect towers. Secondly, production of wind energy does not lead to the emission of greenhouse gases or any other waste that may pollute the environment. In terms of environmental effects, wind energy is one of the best sources of electricity. According to Hu et al., increased global concern of environmental preservation has led to development of wind generated power systems (783). Many national governments are looking for sources of energy that does not have negative environmental impacts. Thirdly, wind energy is renewable since wind is always blowing and it can be used time and again.

However, one of the major shortfalls of wind energy compared to other sources is high levels of unreliability since meteorologists find it hard to forecast its occurrence. In some days there is wind while on others there is no wind which means that electricity generated using this method can only be used in some days. This unpredictability make wind energy unreliable for use in the industries, businesses, and even at home since businesses and industries will be required to close during low wind seasons. Secondly, production of wind energy can be too noisy as the rotating propellers cut the moving wind (Shroeder 1652). Though with improved techniques it is

possible to reduce this noise, its magnitude may not be reduced to very low levels like other sources of energy.

Though production of wind energy has a number disadvantages such high levels of unreliability, it is very practical to generate and use this power. From the past assessment of the effectiveness of wind energy in countries like Turkey and US, proper planning and storage of wind energy can offer a good alternative source of energy due to its harmless effects to the environment. With good techniques of tapping offshore wind, power generating company can produce enough megawatts to supply all the surrounding areas with electricity. Again, wind as a source energy has been used for long time in history to generate energy for various uses.

In conclusion, wind energy offers a number benefits that may make it one the possible alternative source of power in the 21st century. It is environmentally friendly, cheap, and renewable source of energy that requires less capital investment. However, the fact that this source of energy depends on the wind which is unpredictable make it unreliable for uses in places that requires steady supply of power. Nevertheless adoption of modern techniques that can be used to store wind energy can improve the reliability of this source of energy.

Bibliography

Hu, P., Karki, R. and Bilinton, R.. “ Reliability evaluation of generating systems containing wind power and energy storage.” IET Generation, Transmission & Distribution 3. 8 (2009): 783-791. Print.

<https://assignbuster.com/research-paper-on-the-energy-source-is-cheap-as-it-is-readily-available-with-initial-capital-also/>

This article gives an evaluation of wind as a source of by looking at its benefits as well as its shortfall. According to the author wind energy or penetration is not controllable and is highly variable. The author also looks at how wind energy can be stored to make it more reliable.

İlkilic, C. and Nursoy, M.. “ The Potential of Wind Energy as an Alternative Source in Turkey.” *Energy Sources Part A: Recovery, Utilization & Environmental Effects* 32. 5 (2010): 450-459. Print. The authors in this article focus on the potential of wind as a source energy using the case study of Turkey. Potential of wind energy in various regions of Turkey is analyzed as a way of assessing whether wind energy can be used as an alternative source of energy especially at this time of increased global concern on environmental preservation.

Schroeder, E. “ Turning Offshore Wind On.” *California Law Review* 98. 5, (2010): 1631-1667. Print. Schroeder in this article explores the potentials and benefits of using offshore wind power in the United States. He also discusses the regulatory framework that is required to manage offshore resources by balancing the interests of individual states and the federal government. The author argues that offshore wind is a good source of energy if the necessary regulatory mechanisms are established.

Walter, D. F. “ Wind Power: An Emerging Energy Resource.” *Technology & Engineering Teacher* 70. 1, (2010): 9-15. Print.

The author in this article explains how wind energy can be generated. Walter continues to argue that propellers are used to convert wind energy to mechanical energy to produce electricity. According to him wind energy is

one the oldest source of energy that was used to drive windmills in Europe and it can still be utilized as an alternative source of energy even today.

Work cited

Hu, P., Karki, R. and Bilinton, R.. “ Reliability evaluation of generating systems containing wind power and energy storage.” IET Generation, Transmission & Distribution 3. 8 (2009): 783-791. Print.

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